

AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A method for ~~the treatment of overproduction of mucin in a mammal~~ reducing an up-regulated gene expression of *MUC5AC* in a mammal, comprising: administering an inhibitor of p38 MAP kinase to the mammal in an amount sufficient to reduce the up-regulated expression of *MUC5AC* gene ~~mucin production~~.

2. **(Currently amended)** The method of Claim 1 wherein the ~~overproduction of mucin~~ said up-regulated expression of *MUC5AC* gene is caused by an otitis media (OM) infection or chronic obstructive pulmonary disease (COPD).

3. **(Original)** The method of Claim 2 wherein the OM or COPD is caused by nontypeable *Haemophilus influenzae* (NTHi).

4. **(Original)** The method of Claim 1 wherein said inhibitor of p38 MAP kinase is a chemical inhibitor selected from the group consisting of: pyridinylimidazole SB203580, SB202190, SB220025, SC68376, SKF-86002, a dominant-negative mutant of p38 α , and a dominant-negative mutant of p38 β .

5. **(Withdrawn)** The method of Claim 1 wherein the inhibitor of p38 MAP kinase is an antisense oligonucleotide.

6. **(Withdrawn)** The method of Claim 1 wherein the inhibitor of p38 MAP kinase is a vector which expresses a protein or polypeptide which inhibits p38 MAP kinase.

7. **(Withdrawn)** The method of Claim 1 wherein the method of administration is selected from the group consisting of: inhalation, ear drops, transtympanically, intramuscularly, intravenously, and by mouth.

8. **(Withdrawn)** A method for the identification of regulators of mucin production, comprising:

providing a reporter vector containing the *MUC5AC* or p38 MAP kinase promoter;

contacting the reporter vector with a potential regulator; and

identifying the up-or down-regulation of the reporter gene.

9. **(Withdrawn)** The method of Claim 8, wherein said potential regulator is selected from the group consisting of: a polypeptide, a polynucleotide, and a small molecule.

10. **(Withdrawn)** The method of Claim 8, wherein said potential regulator is a mixture of proteins from a cell.

Appl. No. : 09/997,551
Filed : November 27, 2001

11. **(Withdrawn)** The method of Claim 8, wherein said potential regulator is an antisense polynucleotide.

12. **(Withdrawn)** The method of Claim 8, wherein said potential regulator is a library of small molecules.

13. **(Withdrawn)** A method for the treatment of overproduction of mucin in a mammal, comprising: administering an activator of PI-3 kinase to the mammal in an amount sufficient to reduce mucin production.

14. **(Withdrawn)** The method of Claim 13 wherein the overproduction of mucin is caused by a disease selected from the group consisting of: Otitis media, chronic obstructive pulmonary disease, asthma, and cystic fibrosis.

15. **(Withdrawn)** The method of Claim 14, wherein said overproduction of mucin is caused by otitis media (OM) infection or chronic obstructive pulmonary disease (COPD).

16. **(Withdrawn)** The method of Claim 14 wherein the OM or COPD is caused by nontypeable *Haemophilus influenzae* (NTHi).

17. **(Withdrawn)** The method of Claim 13 wherein said activator of PI-3 kinase is a protein selected from the group consisting of: a dominant negative mutant of PI-3 kinase, a constitutively active form of p110 (p110-CAAX), wildtype Akt.

18. **(Withdrawn)** The method of Claim 13 wherein the inhibitor of p38 MAP kinase is an antisense oligonucleotide.

19. **(Withdrawn)** The method of Claim 13 wherein the inhibitor of PI-3 kinase is a vector which expresses a protein or polypeptide which activates PI-3 kinase.

20. **(Withdrawn)** The method of Claim 13 wherein the method of administration is selected from the group consisting of: inhalation, ear drops transtympanically, intramuscularly, intravenously, and by mouth.

21. **(Currently amended)** The method of Claim 1 wherein the ~~overproduction of mucin~~ up-regulated expression of *MUC5AC* gene is caused by a chronic sinusitis infection.

22. **(Previously presented)** The method of Claim 21 wherein the chronic sinusitis infection is caused by nontypeable *Haemophilus influenzae* (NTHi).